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Structure, stability, and lability of copper(II) complexes with triglycine

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Abstract

Equilibrium constants of complex formation, rate constants of chemical exchange reactions, and characteristics of electronic absorption spectra for species detected in aqueous solution of copper(II) with triglycine were determined, and conclusions on the structure of the complexes were made. A possibility of H-bond formation between the ammonium group of the zwitter-ionic form of the ligand and the second peptide oxygen in the anionic form of an adjacent ligand was shown. Kinetics and mechanisms of ligand and proton exchanges in solutions of copper(II) bistripeptide complexes with the ligand containing a deprotonated peptide nitrogen atom were studied. A new mechanism was proposed for hydroxide-catalyzed substitution reactions in copper(II) complexes with tripeptides.

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